

English translation of Japanese Patent Publication No. 04-106603 (1992)
Date of publication: August 4, 1992

Application Number: **02-226012 (1990)**
Date of filing: **August 27, 1990**

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2. Scope of Patent Claim

A machining diagnostic device characterized by comprising:

a machining condition storage means for storing machining conditions for machining a work piece with a numerically controlled machine tool, the machining conditions including a sequence of machining, a work piece rpm, a tool feeding speed, and a machining allowance;

a machining result storage means for storing machining results obtained by machining the work piece according to the machining conditions, the machining results including a machining time, a surface roughness, a dimensional accuracy, and a circularity;

a knowledge base means for storing relations between the machining conditions and the machining results as rules;

a machining result modifying means for partially modifying the machining results;

a first inference means for obtaining, by applying the rules stored in the knowledge base means, modified machining conditions based on the machining results modified by the machining result modifying means;

a second inference means for obtaining, by applying the rules stored in the knowledge base means, modified machining results based on the modified machining conditions obtained by the first inference

means; and

a display means for displaying the modified machining conditions and the modified machining results.